

animals preserved in spirits, or skeletons." The spirit collection till recently has been much neglected, and all who have wished to prosecute their investigations into the more intricate details of zoology and comparative anatomy—into points of myology, nerve distribution, &c., quite as important as, but much less easily arrived at than, osteological characters—may justifiably look forward to the time when the national collection will contain, preserved in their entirety, examples of all reasonably-sized species.

"In the acquisition by purchase of skeletons, particular care has been taken [we are told] that they should be those of animals captured in a wild state, the skeletons of mammals (and birds) which have been brought up or have lived for some time in menageries, showing rarely, if ever, a perfect development of the osseous system. Scarcely less caution is required in admitting specimens of this kind into the collection for the sake of their skins." There is a great deal of truth in these remarks, but there are many new species of animals, such as the new Mourning Kangaroo, brought over by M. d'Alberty, and the Hairy-eared Rhinoceros (*Rhinoceros lasiottis*), discovered by Mr. Sclater, and now enjoying perfect health in the Zoological Society's Gardens, which are only known from these individuals.\* It would be a loss to the collection if these were not obtained when opportunity afforded, and we are glad to know that the small kangaroo referred to has died and has been secured by Dr. Günther.

We are informed that over three thousand students who have visited the department during the past year, with the object of consulting the various portions of the collections, "have been assisted and attended to." All, we are convinced, will agree in expressing their best thanks to Dr. Albert Günther, who, as the worthy successor of the late Dr. J. E. Gray, has done all in his power to place every facility in the way of those who are desirous of studying Natural History.

### NOTES

M. LEVERRIER was expected in England during the present month; but as the revision of his planetary theories, and especially of the Theory of Saturn, in which he has been occupied for some time, is not yet completed, his visit to this country will be delayed.

THE Emperor of Brazil has sent to Prof. Virchow, accompanied by an autograph letter in French, an interesting collection of skulls and skeletons, amongst which are some found in ancient caverns of Brazil. The collection has been made at the Emperor's request by the director of the Museum at Rio, Señor Ladislao Neto. The Emperor regrets that he did not have the pleasure of making Prof. Virchow's acquaintance at Berlin when he visited that city, as the Professor's investigations "are highly esteemed even by those to whom, like myself, it is not given to be more than friends to science."

THE Geographical Society of Rome gave a banquet, on May 11, to the celebrated African traveller Dr. Nachtigal; many of the members and several notabilities of the city of Rome were present in honour of the guest. The Vice-president of the Society, Senator Amari, proposed the health of the guest, who had just returned from a journey through Fezzan, Bornu, Wadai, and Darfur. Dr. Nachtigal, in reply, wished success to the scientific expedition to Central Africa planned by the Society; he considered that this expedition would be an honour to the whole Italian kingdom.

THE transfer of the India Museum to the Eastern Galleries of the International Exhibition Buildings, South Kensington, having been completed, the collection was thrown open to the

Institute of Civil Engineers, who had a brilliant *conversazione* in the galleries on Tuesday evening; there were about 2,500 present. Considerable advance has been made in the arrangement of the valuable collections belonging to the Museum, though it must necessarily take some time before everything can find its proper place. There are two galleries, the upper and the lower. In the former, the Manufactures and Arts of India are represented; in the latter, which are not yet finished, the Natural History of Hindostan, the mineral, vegetable, and animal products, are represented. No doubt the India Museum, as it will ultimately be arranged, will become a favourite and instructive resort of the public, and we hope it is only the first step towards the realisation of Dr. Forbes Watson's great scheme of an Indian Institute.

MR. H. H. SCLATER, the naturalist to the Rodrigues section of the late Transit of Venus Expedition, and the Rev. A. E. Eaton, who held the same position at Kerguelen's Land, are both working out the materials which they collected during their stay in the islands which they visited. The former zoologist has obtained a great number of remains of the extinct Solitaire, one skeleton and several skulls being perfect; besides the remains of several other species of birds. Mr. Eaton's specimens include the skeleton of one Cetacean, two Seals, and several species of Petrels.

DR. LYON PLAYFAIR has withdrawn his bill for restricting experiments on animals, on account of the appointment of a Royal Commission on the subject, the names of the members of which have not yet been published.

PROF. LEIDY, the distinguished American biologist, is now in this country.

THE volcanic phenomena in Iceland, of which we have already given some details (vol. xi. p. 514) seem still to be as active as ever, and indeed to be gaining in intensity. Outbreaks have occurred since the beginning of the year to the middle of April, when the latest news left. In March the Dyngjufjöll was incessantly vomiting fire, the eruption was steadily spreading over the wilderness, and the whole region of the My-vatn Mountains was one blazing fire. So large a district of the surrounding country has been covered with ashes that the farmers have been obliged to remove in order to find pasture for their stock. Early in April a new eruption had broken out in a south-easterly direction from Barfell, more than half-way to the east, between it and the Jokulsa. A party went out from Laxárdal to explore, and on approaching the place of eruption they found the fire rising up from three lava craters, in a line from south to north, which it had piled up around itself on a perfectly level piece of ground. At a distance of fifty to eighty fathoms to the west from the craters a large fissure had formed itself as the fire broke out, and the land had sunk in to the depth of about three fathoms. Into the hollow thus formed the lava had poured at first, but now it flowed in a south-westerly direction from the two southern craters. The northernmost crater had the appearance of being oblong, about 300 fathoms in length, and from this crater the molten red-hot lava was thrown about 200 or 300 feet into the air in one compact column. The top of this column then assumed a palmated appearance, and the lava fell down in small particles, like drops from a jet of water, which, as they became separated from the column, grew gradually darker, and split into many pieces, bursting into lesser and lesser fragments as they cooled. No flames were observed, but the glare proceeds from these columns and the seething lava in the craters. At times the explorers could count twenty to thirty of these columns. No real smoke accompanied the eruption, but a bluish steam, which expanded and whitened in colour as it rose to a greater distance from the crater, and such seemed to be the power of this blue jet of steam that it rose straight into the air for many hundreds of fathoms in despite of a heavy wind blowing.

\* A second specimen of the latter species has been just received by Mr. C. Jamrach.

A SHOCK of earthquake was felt at Spezzia, Italy, on May 20. It is possible that the earthquakes which were felt almost daily in Italy a few weeks since were connected with the Icelandic phenomena; generally, any volcanic commotion in Iceland occurs simultaneously with volcanic or seismic phenomena in Italy.

THE University of Cambridge proposes to confer the honorary degree of LL.D. upon Dr. Samuel Birch, F.S.A., the Keeper of Oriental Antiquities in the British Museum.

THE death is announced, on Feb. 5 last, at the age of thirty-five years, in the interior of Africa, of Mr. Frank Oates, F.R.G.S., who, since the beginning of 1873, has been travelling in that country with the twofold object of acquiring an accurate knowledge of its natural features and of studying its fauna. After spending some time in the Matabele country, north of the Limpopo River, towards the end of last year Mr. Oates proceeded to the Victoria Falls, on the Zambesi. Shortly after leaving the Zambesi, when near to the Makalake towns, he succumbed to fever. Mr. Oates's effects, it is hoped, will be brought home by a personal friend, who has recently gone up country from Pietermaritzburg. They include a large number of specimens of natural history and curiosities which Mr. Oates had collected, besides all his notes and papers, and are expected to prove of very considerable interest. Mr. Oates had already made a successful expedition into North and Central America.

THE Report read at the Anniversary of the Royal Geographical Society on Monday shows a net increase of 202 members, the roll of ordinary members now reaching the total of 2,960. The total income of the year was 7,511*l.* 1*s.* 10*d.*, all but about 500*l.* of which has been disbursed. Medals were presented to Count von Beust on behalf of Lieuts. Weyprecht and Payer, and to the successful competitors in the public schools examinations. A presentation gold watch was handed by the chairman, Sir H. C. Rawlinson, to Col. Montgomerie, of the Indian Trigonometrical Survey, for transmission to Mr. W. H. Johnson, the explorer of Kuen Lun and Khotan. The President, in his address, referred to the losses by death sustained by the Society, to the Arctic Expedition, to the Admiralty Surveys in the *Challenger*, the *Basilisk*, the *Shearwater*, and other vessels, and to other geographical topics.

MR. WILLIAM MACLEAY, of Sydney, who has fitted out the expedition for the exploration of New Guinea, is, we believe, an ardent naturalist. The ship he has purchased is named the *Chevert*, and has been placed under the command of Captain Edwards. Mr. Macleay accompanies the expedition, which left Sydney on the 18th inst.

THE body of an American, John Blackford by name, has recently been found in a large ice-block in the vicinity of Mont Blanc, after several days of thaw. The unfortunate tourist had tried three years ago to ascend Mont Blanc without a guide, and had not since been heard of. Features and clothes are perfectly preserved.

IN the vicinity of Salzwedel an immense layer of rock-salt has been discovered. Borings had been made for some time past with a view to discovering coal; the formation of limestone, however, in which these experiments were made, is extremely hard, and the borings made but small progress. At the beginning of this year the first specimens of rock-salt were obtained at a depth of about 730 feet. The borings have now gone 250 feet deeper, and the rock-salt remains the same. It is the intention of the proprietor to go to a depth of 2,000 feet.

MR. MALLET's paper on "The Nature and Origin of Volcanic Heat and Energy," read to the Royal Society in 1872, and published in *Phil. Trans.* for 1873, has been translated in full into German by Dr. A. von Lasaulx, Professor of Geology at the University of Bonn, and published as a separate work. We regret that a few clerical errors which escaped correction until

the original paper was published, together with the necessary errata, have been overlooked by the translator. The errors are, however, self-evident, and occur in the German translation in paragraphs 186 to 198. The errors originate by dividing, in place of multiplying, a certain number of heat units at line 11, par. 186, and do not affect the argument of the paper.

A LITTLE medal of palladium, with hydrogen occluded in it, now at Leeds, is described by the compiler of the "Yorkshire Exhibition Guide" in the following terms:—"A medal and plate formed of the new metal, palladium, will be interesting to scientific men. The discovery of this metal by Prof. Graham a few years ago finally settled the long-disputed point as to whether or not the gas hydrogen was a metal. He proved that palladium was simply hydrogen condensed. This may be easily exemplified by placing a piece of the metal under the receiver of an air-pump and exhausting the air. The solid metal at once flies off as a gas, and on re-admitting the air it shrinks again into its former size. The little medal shown contains 100 times its volume of the gas." The writer's wild remarks display so much ignorance, that it is to be feared, notwithstanding their calm positiveness, they can hardly be attributed to a firm and cheerful faith in molecular mobility.

THE French Academy of Sciences, at its private meetings, is at present deliberating upon the means of diminishing the expenses of publishing the *Comptes Rendus* without injuring the interest of science. The yearly expense of editing that journal is about 70,000 francs, after deducting the receipts from the sale, which is not very large. The Academy has a very liberal free list, the number of copies presented amounting to many hundreds. It has been proposed by M. Leverrier to use a smaller type. Objections have been raised by some members, who wish merely to diminish the number of pages allotted to the several papers. But it is very likely that the former suggestion will be adopted, and steps taken to make the *Comptes Rendus* less bulky. The *Comptes Rendus* forms yearly two thick quarto volumes. The eightieth volume is in course of publication. The number of pages published since the 1st of June, 1835, is about 100,000.

THE Report of Brigadier-General Myer, Chief Signal Officer of the United States for 1874, has just been received. This Report, giving an admirable *résumé* of the meteorology of the United States for 1873-74, and exhibiting throughout an earnestness and a vigour in the successful application of the science to practical matters, we shall take an early opportunity to bring before our readers.

SYMONS' "British Rainfall," showing the distribution of rain over the British Isles during 1874, as observed at about 1,700 stations, has just been published. It contains, in addition to the usual large mass of valuable information detailing the rainfall of the year, a notice of the remarkable rainfall of October 6, and a map showing its distribution over England and south of Scotland; and papers on the measurement of snow and on the rainfall at certain health-resorts in the United Kingdom. We observe with much satisfaction that the editor has obtained the services of nine gentlemen as county superintendents, to assist him in collecting the rain returns of their respective districts, it being in this way that the observation of this important element will best be rendered still more complete. The publication of the monthly as well as the annual amounts of rain for the whole of the 1,700 stations is very desirable, and it is hoped that in an early issue of the "British Rainfall" it will be done.

A NEW street in Magdeburg has just been called "Guerike Street." Our readers know that Otto von Guerike, some time Burgomaster of Magdeburg, was the inventor of the air-pump.

ON May 20 the Plenipotentiaries of France, Austria, Germany, Italy, Russia, Spain, Portugal, Turkey, Switzerland, Belgium,



Sweden, Denmark, the United States, the Argentine Republic, Peru, and Brazil, signed, at Paris, the International Convention for the adoption of the metrical system of weights and measures. A special clause reserves to the States not included in the above list the right of eventually adhering to the Convention.

IT was the Hon. T. Elder (not Eden), who, with Mr. Hughes, bore the expenses of Col. Warburton's journey across Australia, the narrative of which we noticed in last week's NATURE (p. 46).

THE French Association for the Advancement of Science meets at Nantes this year, under the presidency of M. d'Eichtal, an influential banker largely connected with railway interests. The local committee is presided over by the Mayor, and a large sum has been collected for defraying the expenses connected with the meeting.

THE annual report of the trustees of the Museum of Comparative Zoology, of Cambridge, U.S., for 1874 has just been published, and contains the current history of that distinguished establishment, as also the list of the additions to its various departments. The strict economy necessary to relieve the Museum from its embarrassments, after the death of Prof. Agassiz, has effected its purpose, and its financial condition is rapidly approaching a satisfactory state.

PROF. ALEXANDER AGASSIZ announces that the experience of the past two years has shown the impossibility of conducting the Anderson School of Natural History, Penikese Island, upon the plan originally intended. The trustees find themselves at the end of the means at their disposal. To enable them to carry on the school it is proposed to charge a fee of fifty dollars for the season, and they hope that a sufficient number of pupils can be secured to warrant them in going on. Even with the proposed charges there will be a considerable deficit (as was the case last year) to be met by the friends of the Penikese School.

WE believe that M. Wallon, the French Minister of Public Instruction, is to present a law for the organisation of the higher education in France.

THE *Watford Observer* of May 22 contains reports of two papers read at the last meeting of the Watford Natural History Society: "Introductory Remarks on the Observation of Periodical Natural Phenomena," by Mr. J. Hopkinson, F.L.S., and "Notes on the Observation of Plants," by the Rev. Dr. W. M. Hind. It is gratifying to see local societies turning their attention to subjects of so much importance.

DURING the first three days of last week the Geologists' Association made an interesting excursion to Charnwood Forest, in Leicestershire. A full report of the proceedings appears in the *Leicester Chronicle* for May 22.

MESSRS. CHAPMAN AND HALL have just published a translation of F. Jagor's "Travels in the Philippines," of the German edition of which we were able to give a favourable review in vol. viii. p. 138. The translation seems to us to be well done, and the book contains a good map and many illustrations; it merits a favourable reception from the English reading public.

WE have an evidence of the activity of research in the United States in the following list of American Microscopical Societies furnished by the *American Naturalist*:—Agassiz Institute, Sacramento, California; Academy of Natural Sciences, Philadelphia, Biological and Microscopical Section; American Association for the Advancement of Science, Microscopical Section; American Microscopical Society of New York; Bailey Club, New York; Boston Microscopical Society; Boston Society of Natural History, Microscopical Section; Dartmouth Microscopical Club, Hanover, N. H.; Fairmount Microscopical Society of Philadelphia; Indiana Microscopical Society, Indianapolis, Ind.;

Kirtland Society of Natural History, Cleveland, Ohio, Microscopical Branch; Louisville Microscopical Society, Louisville, Kentucky; Maryland Academy of Sciences, Baltimore, Section of Biology and Microscopy; Memphis Microscopical Society, Memphis, Tenn.; New Jersey Microscopical Society of the City of New Brunswick, N. J.; Providence Franklin Society, Providence, N. J., Microscopical Department; San Francisco Microscopical Society; Society of Natural Sciences, Buffalo, N.Y., Microscopical Section; State Microscopical Society of Illinois, Chicago, Ill.; State Microscopical Society of Michigan, Kalamazoo, Mich.; Troy Scientific Association, Troy, N.Y., Microscopical Section; Tyndall Association, Columbus, Ohio, Microscopical Section. Eight of these societies have been established within the last two years.

WE have received the Eighth Annual Report of the Perthshire Society of Natural Science, from which we regret to see that there has been rather a falling-off in the prosperity of the Society, arising mainly from indifference on the part of the majority of its members. In this, as in most other similar societies, the work is done by but a small portion of the members. Still the Society is working well in various ways, and this report contains a long and interesting address by the President, Sir Thomas Moncrieff, on the work done by the Society during the past year. We hope the publication of this Report will be the means of rousing a larger number of the members to take an interest in the work of the Society.

THE Report for 1874, read at the thirteenth annual meeting of the West Riding Consolidated Naturalists' Society, embracing a large number of Field Clubs in the West Riding, is a very favourable one. At the time of the meeting, some months ago, the number of members was 545, and the Report states there is good reason to believe that studies in the various branches of Natural History are now diligently and earnestly pursued.

THE additions to the Zoological Society's Gardens during the past week include a Black Ape (*Cynopithecus niger*) from Celebes, presented by the Hon. Evelyn H. Ellis; a West Indian Agouti (*Dasyprocta antillensis*) from Trinidad, presented by Mr. Christopher James; a Coypu Rat (*Myopotamus coypu*) from South America, presented by Mr. Robert E. Paton; a King Penguin (*Aptenodytes pennanti*) from the Falkland Isles, presented by Mr. L. Cobb; an Indian Cobra (*Naja tripudians*), two Russell's Vipers (*Vipera russelli*), three Carpet Vipers (*Echis carinata*), an Indian Eryx (*Eryx johnii*), an Indian Python (*Python molurus*), three Indian Rat Snakes (*Ptyas mucosa*), and five Long-snouted Snakes (*Passerita mycterizans*), from India, presented by Dr. John Shortt; two Rendall's Guinea Fowls (*Numida rendalli*) from West Africa, two King Parrakets (*Aprosmictus scapulatus*) from New South Wales, deposited; a Molucca Deer (*Cervus moluccensis*), born in the Gardens.

## SCIENTIFIC SERIALS

*Journal of the Franklin Institute*, April.—The following are the principal original papers in this number:—Report on a test trial of a Swain turbine water wheel, by J. B. Francis, C.E.—On the moments and reactions of continuous girders, by M. Merriman, C.E.—Compound and non-compound engines, steam jackets, &c., by C. E. Emery, C.E.; this is the first part of a paper presenting a discussion of the results of experiments made on several U.S. Government steamers.—First part of a paper on experiments made at the Mare Island Navy Yard, California, with different screws applied to a steam launch, to ascertain their relative propelling power, by Chief Engineer B. F. Isherwood, U.S.N.—New processes in proximate gas-analyses, by Prof. Henry Wurtz, continued from a former number.—On the cause of the light of flames, being a translation from the German of W. Stein, who discusses the results attained by Prof. Frankland.